



# Educational Topic

## Biologist

### Related Job Titles:

Life scientist, medical scientist, biomedical engineer, biological scientist, psychologist

### Job Description:

Biologists study living things and their relationship to their environment. Most biologists work in research and development. Some work on basic research to learn more about living things such as bacteria and viruses. Some work on applied research which uses basic research to come up with new medicines, ways to make plants grow better or ways to protect the environment. At NASA, life scientists often research how space environments affect living things, how to support life in space and how life began and changed over time. Some biologists spend time writing proposals to ask for funding for their research. They usually work regular hours in laboratories and use microscopes, computers and other equipment. Some use plants and animals for experiments. Many do research outside, and many work with a team.

### Interests / Abilities:

- Do you enjoy science?
- Do you enjoy doing experiments?
- Are you interested in how animals and plants function?
- Do you work well on your own?
- Do you work well with a team?
- Do you enjoy solving mysteries or problems?

### Suggested School Subjects / Courses:

- Biology
- Chemistry
- Physics
- Biochemistry with laboratory research and fieldwork
- Math

### Education / Training Needed:

The minimum education required for this position is a bachelor's degree in biology or other appropriate field of life science from an accredited college or university. This course of study must include at least 20 semester hours of physical science or engineering or experience that leads to the understanding of the equipment used for manned aerospace flights. To do research, a Ph.D. is highly desired for this position.

### Areas of expertise:

- *Chemical and biological evolution*: study what life is, where it's located, and how it began and changed over time
- *Life support*: research, develop and test life support equipment for aerospace flight
- *Microbiology*: study animals or plants so small, they can only be seen through a microscope
- *Biochemistry*: study the chemicals that living things are made of
- *Physiology*: study how plants and animals function including growth, reproduction, photosynthesis, respiration, movement and how these are affected by space environments
- *Neurobiology*: study the nervous system of living things and how it is affected by space environments

## Additional Resources:

- NASA Office of Life and Microgravity Sciences and Applications  
<http://www.hq.nasa.gov/office/olmsa/>
- American Institute of Biological Sciences  
<http://www.aibs.org>
- American Physiological Society  
<http://www.faseb.org/aps>
- Biotechnology Industry Organization  
<http://www.bio.org/welcome.html>
- American Society for Biochemistry and Molecular Biology  
<http://www.biophysics.org/biophys/society/biohome.htm>
- American Society for Microbiology  
<http://www.asmtusa.org>
- Student Educational Employment Programs  
[http://nasajobs.nasa.gov/stud\\_opps/employment/index.htm](http://nasajobs.nasa.gov/stud_opps/employment/index.htm)
- NASA Jobs  
<http://nasajobs.nasa.gov/>
- NASA Summer High School Apprenticeship Research Program (SHARP)  
<http://www.mtsibase.com/sharp/>

## What can I do right now?

- Join a local environmental club or organization.
- Participate in Earth Day activities.
- Take summer jobs or internships at parks, farms, plant nurseries, laboratories, museums or camps.
- Visit Astro-Venture regularly to participate in chats and activities.  
<http://astroventure.arc.nasa.gov>
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit.  
(202) 783-7200
- Participate in science fair projects.

- .....
- Please take a moment to evaluate this product at:
  - [http://ehb2.gsfc.nasa.gov/edcats/educational\\_topic](http://ehb2.gsfc.nasa.gov/edcats/educational_topic)
  - Your evaluation and suggestions are vital to continually improving NASA educational materials.
  - Thank you.
- .....



<http://quest.nasa.gov/people/index.html>

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